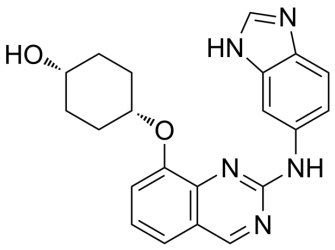
NCB-0846

Cat. No.:	HY-100830
CAS No.:	1792999-26-8
Molecular Formula:	$C_{21}H_{21}N_5O_2$
Molecular Weight:	375.42
Target:	Wnt; MAP4K
Pathway:	Stem Cell/Wnt; MAPK/ERK Pathway
Storage:	Powder -20°C 3 years 4°C 2 years In solvent -80°C 1 year -20°C 6 months



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 30 mg/mL (79.91 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Concentration / Solvent / Mass	1 mg	5 mg	10 mg
1 mM	2.6637 mL	13.3184 mL	26.6368 mL
5 mM	0.5327 mL	2.6637 mL	5.3274 mL
10 mM	0.2664 mL	1.3318 mL	2.6637 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.25 mg/mL (5.99 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.25 mg/mL (5.99 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

NCB-0846 is an orally available TNIK inhibitor with an IC_{50} of 21 nM.

IC_{50} & Target

Wnt	TNIK 21 nM (IC_{50})

In Vitro

NCB-0846 has anti-Wnt activity. NCB-0846 binds to TNIK in an inactive conformation, and this binding mode seems to be essential for Wnt inhibition. NCB-0846 shows inhibitory activity against TNIK with an IC_{50} of 21?nM. NCB-0846 also inhibits FLT3, JAK3, PDGFRα, TRKA, CDK2/CycA2, and HGK. NCB-0846 induces faster migration of TCF4 phosphorylated by TNIK within a concentration range of 0.1-0.3?μM and completely inhibits the phosphorylation of TCF4 at a concentration of 3?μM.

	NCB-0846 inhibits HCT116 cell growth and shows much higher (-20-fold) inhibitory activity against colony formation by the same cells in soft agar[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	NCB-0846 suppresses the growth of tumors established by inoculating HCT116 cells into immunodeficient mice. The expression of Wnt-target genes (AXIN2, MYC and CCND1) in xenografts is reduced following the administration of NCB-0846. NCB-0846 induces an increase in the sub-G1 cell population. Cleavage of poly (ADP-ribose) polymerase 1 indicates the induction of apoptosis[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Animal Administration [1]	Mice: NCB-0846 is suspended in DMSO/polyethylene glycol#400/30% 2-hydroxypropyl-β-cyclodextrin solution (10:45:45v/v). Five million HCT116 cells suspended in medium containing 25% Matrigel are inoculated into the subcutaneous tissues of 9-week-old female BALB/c nude mice. Mice are randomized according to tumour volume (9 mice per group). NCB-0846 was administered daily by oral gavage at 0 (vehicle alone), 40 or 80 mg/kg (body weight) BID (bis in die) for 14 days[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Oncogene. 2021 Apr 12.
- ACS Comb Sci. 2019 Dec 9;21(12):805-816.

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REFERENCES

[1]. Masuda M, et al. TNIK inhibition abrogates colorectal cancer stemness. Nat Commun. 2016 Aug 26;7:12586.

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